AMENDMENTS

In the Claims

Please cancel claims 1-169 without prejudice.

Please add the following new claims:

170. (New) A method of identifying crystalline polymorphs of a small molecule pharmaceutical, comprising:

(a) preparing an array of at least 24 samples, each of which comprises less than about 100 micrograms of the small molecule pharmaceutical and one or more components;

(b) processing the samples simultaneously such that at least two of the processed samples comprise a polymorph of the small molecule pharmaceutical; and

(c) analyzing the processed samples using spectroscopy to detect the polymorphs;

wherein the polymorph in one of the at least two processed samples is different from the polymorph in another of the at least two processed samples.

171. (New) A method of identifying salts of a small molecule pharmaceutical, comprising:

(a) preparing an array of at least 24 samples, each of which comprises less than about 100 micrograms of the small molecule pharmaceutical and one or more components;

(b) processing the samples simultaneously such that at least two of the processed samples comprise a salt of the small molecule pharmaceutical; and

(c) analyzing the processed samples using spectroscopy to detect the salts;

wherein the salt in one of the at least two processed samples is different from the salt in another of the at least two processed samples.

172. (New) A method of identifying co-crystals of a small molecule pharmaceutical, comprising:

(a) preparing an array of at least 24 samples, each of which comprises less than about 100 micrograms of the small molecule pharmaceutical and one or more components;

(b) processing the samples simultaneously such that at least two of the processed samples comprise a co-crystal of the small molecule pharmaceutical; and

(c) analyzing the processed samples using spectroscopy to detect the co-crystals;

wherein the co-crystal in one of the at least two processed samples is different from the co-crystal in another of the at least two processed samples.

173. (New) A method of identifying crystalline polymorphs of a small molecule pharmaceutical, comprising:

(a) preparing an array comprising at least 1 group of at least 24 samples, wherein each sample comprises one or more components and less than about 1 milligram of the small molecule pharmaceutical, and further wherein one or more of the processed samples differ with respect to at least one of:

(i) the amount or concentration of the small molecule pharmaceutical;

(ii) a physical state of the small molecule pharmaceutical;

(iii) an identity of one or more of the components;

(iv) an amount or concentration of one or more of the components;

(v) a physical state of one or more of the components; or

(vi) pH;

(b) processing the samples of each group in parallel; and

(c) analyzing the processed array of samples to detect and characterize polymorphs of the small molecule pharmaceutical, wherein the analysis comprises:

(i) providing a filtering means to reduce the number of samples that will ultimately undergo in-depth analysis; and

(ii) grouping similar polymorphs and identifying crystal forms that belong to the same polymorph family;

whereby at least two of the processed samples comprise a crystalline polymorph of the small molecule pharmaceutical.

174. (New) A method of identifying compounds that inhibit crystallization of a small molecule pharmaceutical, comprising:

(a) preparing an array comprising at least 1 group of at least 24 samples, wherein each sample comprises one or more components and less than about 1 milligram of the small molecule pharmaceutical, and further wherein one or more of the processed samples differ with respect to at least one of:

(i) the amount or concentration of the small molecule pharmaceutical;

(ii) a physical state of the small molecule pharmaceutical;

(iii) an identity of one or more of the components;

(iv) an amount or concentration of one or more of the components;

(v) a physical state of one or more of the components; or

(vi) pH;

(b) processing the samples of each group in parallel; and

(c) analyzing the processed array of samples to detect inhibition of crystallization or the prevention of crystallization of the small molecule pharmaceutical;

whereby crystallization of the small molecule pharmaceutical is inhibited or prevented in at least two of the processed samples.

175. (New) A method of identifying crystalline salts of a small molecule pharmaceutical, comprising:

(a) preparing an array comprising at least 1 group of at least 24 samples, wherein each sample comprises one or more components and less than about 1 milligram of the small molecule pharmaceutical and, and further wherein one or more of the processed samples differ with respect to at least one of:

(i) the amount or concentration of the small molecule pharmaceutical;

(ii) a physical state of the small molecule pharmaceutical;

(iii) an identity of one or more of the components;

(iv) an amount or concentration of one or more of the components; or

(v) a physical state of one or more of the components;

(b) processing the samples of each group in parallel; and

(c) analyzing the processed array of samples to detect and characterize crystalline salts of the small molecule pharmaceutical, wherein the analysis comprises:

(i) providing a filtering means to reduce the number of samples that will ultimately undergo in-depth analysis; and

(ii) grouping similar crystalline salts and identifying crystalline salts forms that belong to the same crystal family;

whereby at least two of the processed samples comprise a crystalline salt of the small molecule pharmaceutical.

176. (New) A method of identifying co-crystals of a small molecule pharmaceutical, comprising:

(a) preparing an array comprising at least 1 group of at least 24 samples, wherein each sample comprises one or more components and less than about 1 milligram of the small molecule pharmaceutical and, and further wherein one or more of the processed samples differ with respect to at least one of:

(i) the amount or concentration of the small molecule pharmaceutical;

(ii) a physical state of the small molecule pharmaceutical;

(iii) an identity of one or more of the components;

(iv) an amount or concentration of one or more of the components; or

(v) a physical state of one or more of the components;

(b) processing the samples of each group in parallel; and

(c) analyzing the processed array of samples to detect and characterize co-crystals of the small molecule pharmaceutical, wherein the analysis comprises:

(i) providing a filtering means to reduce the number of samples that will ultimately undergo in-depth analysis; and

(ii) grouping similar co-crystals and identifying co-crystal forms that belong to the same co-crystal family;

whereby at least two of the processed samples comprise a co-crystal of the small molecule pharmaceutical.

177. (New) The method of one of claims 170-172, wherein the spectroscopy is Raman spectroscopy.

178. (New) The method of one of claims 173-176, wherein the detection is performed using Raman spectroscopy.

179. (New) The method of one of claims 173-176, wherein each sample comprises less than about 100 micrograms of the small molecule pharmaceutical.